

Preliminary Safety & Firm Monitor Requirements 2009/10

31st May 2009

Introduction

This document sets out 'Safety Monitors' and 'Firm Gas Monitors' for the 2009/10 winter, pursuant to National Grid's obligations under the Uniform Network Code Section Q.

It is National Grid's responsibility to keep the monitors under review (both ahead of and throughout the winter) and to make adjustments if it is appropriate to do so on the basis of the information available to us. In doing so, we must recognise that the purpose of the safety monitors is to ensure an adequate pressure can be maintained in the network at all times and thereby protect public safety.

Following winter 2008/9, we have reviewed the safety monitor methodology. We are proposing a number of revisions to the calculation of the monitor and enhancements to the dissemination of safety monitor information throughout the winter. We believe that the proposed changes will:

- Improve information provision to the market with respect to safety monitor requirements
- Enable the market to operate more effectively, as there will be greater clarity regarding the necessary safety monitor space and deliverability requirements
- Enhance Security of Supply and the market's ability to plan and thereby efficiently deal with supply "shocks"

National Grid will present these proposals in more detail at the Transmission Workstream meeting on 4th June and at the Gas Operational Forum on 10th June. It should be noted that the proposed changes do not increase the total safety monitor storage requirement.

Our Winter Consultation Report 2009/10, which will be published in June will present an initial view of demand and supplies for the coming winter. It will highlight continuing uncertainty with regard to potential non-storage supply levels, notably for imports, and reduced demand levels.

The preliminary safety monitors shown here use our 2009 demand and supply forecasts produced in May 2009 which incorporate supply and demand information provided to us by market participants through our 2009 Transporting Britain's Energy consultation process. We expect to update our safety monitor analysis to include any further feedback that we receive via the winter 2009/10 consultation process.

National Grid will also continue to provide within winter feedback to industry regarding supply assumptions and any resulting changes to safety monitors by means of monthly updates via Operational Forums and information on our web site.

The firm gas monitors represent the storage levels required to support firm demand in a severe winter. They are published for information only.

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We would welcome views on the appropriate basis for setting the 2009/10 safety monitors and request that market participants respond to our winter 2009/10 consultation process to assist us in developing our final safety monitor determination in September and also attend the Transmission Workstream or Gas Operational Forum meetings to understand our proposals for reviewing the safety monitor methodology.

Background

The Uniform Network Code (UNC) (inter alia) requires us to publish the safety monitors and to provide regular reporting of actual storage stock levels for comparison with these monitors. As the name suggests, the focus of the safety monitors is public safety rather than security of supply. They provide a trigger mechanism for taking direct action to avoid a potential gas supply emergency (as defined in the Gas Safety (Management) Regulations).

In addition, the UNC requires us to calculate and publish firm gas monitors based upon the forecast demands of firm consumers. The firm gas monitors are published solely for the purpose of providing further information to the market.

Proposed revisions to the Methodology

The new methodology calculates the total safety monitor storage space requirement as a single entity rather than broken down into Long, Medium and Short storage requirements. This results in the production of a single safety monitor. In addition a safety monitor deliverability requirement will be calculated. There are a number benefits to adopting this approach:

- The creation of a Total Safety Monitor classification that aggregates all safety monitor storage space requirements ensures that all storage facilities are treated equitably
- The production of a deliverability monitor alongside the space monitor will provide the marketplace with greater information in terms of the overall capability of available storage types and hence enhance security of supply by more accurately reflecting the likely changes in overall storage capability during the course of the winter should certain storage types be exhausted

Whilst the Total Safety Monitor storage space requirement would replace the Long, Medium and Short safety monitor requirements, these classifications of storage would be kept for stock reporting purposes. The proposed revisions to the safety monitor methodology would result in an increase in relevant information available to the market and plans are currently in house to significantly improve market information relating to the security of supply outlook for the entire winter period as it progresses.

There will continue to be two main steps in the assessment of the safety and firm gas monitors:

- The calculation of the total storage requirement at the start of the winter

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- The assessment of the way in which this initial requirement decays as the winter progresses, known as the winter profile. This second step will be expanded to include an assessment of how the total storage deliverability requirement also decays as the winter progresses.

This note only covers the first step, by providing a preliminary assessment of the safety monitor space requirement. The safety monitor requirement is highly dependent on the assumptions made regarding the non-storage supply level. We are currently consulting on the likely non-storage supplies we will see this coming winter. Once the winter consultation process is complete, we will publish the final Safety Monitor and Firm Gas Requirements in September, including the safety monitor storage space requirement winter profile and the deliverability requirement.

Safety Monitor Calculation Process

The concept behind the safety monitors is to ensure that sufficient gas is held in storage to support those gas consumers whose premises cannot be physically and verifiably isolated from the gas network within a reasonable time period. To achieve this all gas consumers are categorised into one of two groups:

- Protected by Monitor - Gas is held in storage to facilitate continuity of supply to these consumers even in a 1 in 50 winter
- Protected by Isolation – Network safety would be maintained if necessary by physically isolating these customers from the network

The categorisation into these groups (accepted by the HS&E as part of the National Grid Gas Safety Case revision) is summarised in the table below:

Table 1: End Consumer Categorisation for Safety Monitors

Protected by Isolation - Sites which can be safely isolated from the network	Protected by Monitor - Sites which require protection under the safety monitor
NTS Interruptibles	Priority ¹ Firm DM
LDZ Interruptibles	Ireland Firm
NTS Power Firm	>5860 MWh NDM
NTS Industrial Firm	2196-5860 MWh NDM
DM (excluding priority customers)	732-2196 MWh NDM
	73-732 MWh NDM
	0-73 MWh NDM

¹ Currently, priority loads represent roughly 2% of protected by monitor demands.

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The safety monitor storage requirements comprise two elements:

- **Supply-demand:** Storage required to support 'protected by monitor' loads, assessed using a severe (1 in 50) winter load duration curve and assumed supply levels;
- **Isolation:** Storage required during the process of demand reduction, effectively to support 'protected by isolation' loads during the period in which these loads would be isolated from the system.

Supply

There is considerable uncertainty regarding the make up and aggregate level of non-storage supplies. The overall supply position is expected to be similar to that experienced last winter. However there is significant movement in the forecasts for the individual supply components. We are forecasting further declines in the UKCS, as well as a reduction in our IUK forecast due to the considerable uncertainty in forecasting IUK volumes, with the potential for IUK exports to the Continent if the UK is well supplied or if there is additional demand on the Continent, as witnessed with the dispute between Russia and Ukraine in winter 2008/9. We have increased our Norwegian forecast to reflect increased Norwegian production, as well as a significant increase in LNG imports, with both terminals at Milford Haven forecast to be operational. There is in addition considerable upside to the LNG forecast.

Table 2 shows the non-storage supply assumptions used in calculating the safety monitors. The safety monitor requirement is highly dependent on the non-storage supply level. We are currently consulting on the likely non-storage supplies we will see this coming winter, as part of the Winter Consultation Report 2009/10, to be released in June.

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The preliminary non-storage supply assumptions are summarised in Table 2.

Table 2 - Supply Assumptions

	CV ² (MJ/m ³)	2009/10 Safety Monitor: non-storage supply assumptions	
		mcm/d	GWh/d
UKCS	39.30	180	1965
Norway	40.00	95	1056
BBL	39.00	25	271
LNG	39.63	30	330
IUK	38.82	10	108
Total		340	3730

Table 3 shows the anticipated availability of storage capacity in winter 2009/10.

Table 3 - Storage

	Space (GWh)	Deliverability (GWh/d)
Short (LNG)	1970 ³	390 ⁴
Medium (MRS)	9576 ⁵	482 ⁶
Long (Rough)	35580 ⁷	455
Total	47126⁸	1327

Demand

The demand background used for the analysis in this section is our latest set of demand forecasts for 2009/10 that we produced in May 2009. This latest 2009 forecast for winter 2009/10 demands is roughly 5% lower than our 2008 forecast for winter 2009/10. With the overall supply position expected to be similar to that experienced last winter, the lower levels of forecast demand have reduced safety monitor levels for winter 2009/10.

² An estimated CV has been applied to assist conversion of data published in both volumetric and energy terms

³ Includes Glenmavis, Partington and Avonmouth space

⁴ Includes Glenmavis, Partington and Avonmouth deliverability

⁵ Includes Hornsea, Hole House Farm, Hatfield Moor, Humbly Grove and Aldbrough space

⁶ Includes Hornsea, Hole House Farm, Hatfield Moor, Humbly Grove and Aldbrough deliverability

⁷ Reflects latest information from Centrica Storage Limited

⁸ Represents total storage space. Operating Margins space bookings, Scottish Independent Undertakings and Constrained LNG requirements for 2009/10 are not excluded

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Safety Monitor Space Requirement

Table 4 shows the total safety monitor space requirement on the basis of the assumptions outlined above.

Table 4 – Total Safety Monitor Space Requirement

	Total storage capacity (GWh)	Space requirement (GWh)	Space requirement %
Total	47126	1289	2.7%

Storage Safety Deliverability Requirement

Table 5 shows the supply surplus on day 1 of the 1 in 50 winter. It should be noted that there is considerable additional deliverability over and above that required to meet NDM and priority demand on the day.

Table 5 – Peak NDM & Priority Demand and Peak Day Supply

Demand	GWh/d
Peak ⁹ NDM & Priority Demand (A)	4120
Peak Supplies	non-storage supply assumptions
UKCS	1965
Imports	1765
Storage	1327
Total Supplies (B)	5057
Supply Surplus (B) – (A)	937

⁹ Note that in this instance peak refers to Day 1 of the Severe (1 in 50) diversified load duration curve, as this represents the highest level of NDM and priority demand that would be supported during a severe (1 in 50) winter

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Firm Monitor Calculation Process

As stated previously, firm gas monitors are published solely for the purpose of providing further information to the market.

The concept behind the firm monitors is to illustrate the indicative level of gas that would need to be held in storage to support all firm demand in a 1 in 50 winter. The analysis uses the same demand and supply assumptions as used for the calculation of the safety monitors.

Firm Monitor Space Requirement

Table 6 shows the indicative total level of storage required to support all firm demand in a 1 in 50 winter. It can be seen that nearly a third of storage is required. This is not surprising, as the 1 in 50 winter represents a sustained, very cold winter. Under such a scenario, with the UK experiencing several months of sustained very cold weather, it seems plausible that the tight supply-demand position will result in higher prices that will in turn attract additional imports, thereby reducing the firm monitor space requirement.

Table 6 – Storage space Analysis

	Total storage capacity	Space requirement (GWh)	Space requirement %
Total	47126	15326	32.5%

Storage Firm Gas Deliverability Requirement

Table 7 shows that there is sufficient deliverability to meet the 1 in 20 peak day firm demand. This shows that there should be no issues regarding supporting all firm demand for short, but very cold snaps.

Table 7 – Peak Firm Demand¹⁰ and Peak Day Supply

Firm Demand	GWh/d
Diversified 1 in 20 Cold Peak Day (C)	4636
Peak Supplies	non-storage supply assumptions
UKCS	1965
Imports	1765
Storage	1327
Total Supplies (D)	5057
Supply Surplus (D) – (C)	421

¹⁰ Diversified firm demand for a 1 in 20 cold peak day